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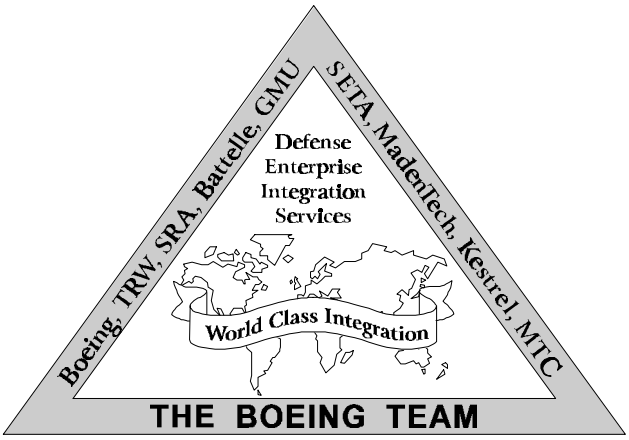

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TECHNICAL SUPPORT FOR
DEFENSE INFORMATION SYSTEMS AGENCY
ENTERPRISE INTEGRATION DIRECTORATE

DELIVERY ORDER FOR GCCS/JOPES DATABASE AND APPLICATIONS PHASE IV

MEPES USERS' MANUAL
CHANGE PAGES
28 JUNE 1996

REVISION SUMMARY

All sections of the MEPES Users' Manual remain the same except for the following changes:

SECTION	CHANGE
Abstract	Text deleted that no longer applies.
Appendix E, Page E-12	Function corrected.

PREFACE

This Users' Manual (UM) was designed to serve the needs of the medical planners who desire or require an overall appreciation of the Medical Planning and Execution System (MEPES) for the function of the Global Command and Control System (GCCS). This manual includes details concerning capabilities of and procedures for the use of the MEPES software. It also incorporates descriptions of calculation logic and nuances of the functions as requested by the user community at the 1988 Joint Planning and Execution System Conference (JPESC), JPESC issue control number C88G03.

ABSTRACT

The Medical Planning and Execution System (MEPES) was developed in response to the Joint Planning Community's need for a consistent means of predicting and evaluating medical requirements in support of OPLAN development. MEPES was developed to replace the JOPES Medical Planning Module (MPM) currently used by the Joint Medical Planning Community. The MPM is a gross medical support requirements calculator of limited utility which has become difficult to maintain.

The objective of MEPES is to provide succinct contingency medical support information to decision makers. MEPES will assemble information from many sources enabling medical planners and operators to quickly present indications of contingency medical support posture in narrative and graphic form. MEPES is an integrated kit of automated tools forming an information management system to aid deliberate, program, and crisis action planning; to monitor status of medical support during execution of Joint operations; to assess the mobilization of medical manpower; to analyze and evaluate medical support plans, programs, and concept of operations; and to support medical planner/operator participation in joint exercise/war games.

MEPES is being developed in two phases. The first phase is the MEPES Core. It is designed to forecast the Theater medical resource requirements based on the warfighting scenario. MEPES Core is designed to retain current MPM functionality while providing significant enhancements to this capability. MEPES Core is designed to be compatible with the organization and unit structure of each of the Services and to recognize the unique requirements of each of the Services. The second phase enables the planner to accomplish critical medical sustainability analysis to support the decision maker in a timely manner. This phase will provide functionality not currently found in the MPM.

MEPES may be accessed by any JOPES user at the user's Global Command and Control System (GCCS) host site.

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SECTION 1 - GENERAL

1.1 PURPOSE OF THE USERS' MANUAL (UM)

The objective of the Users' Manual (UM) for the Medical Planning and Execution System (MEPES) is to provide the user with the information necessary to use the system effectively.

1.2 PURPOSE OF MEPES

The Joint Staff (J4) Medical Readiness Division (MRD) coordinates the medical support mission for the Theater of Operations and Continental United States (CONUS) sustaining base. The medical support system is an integrated continuum of care from the forward edge of the battlefield through the CONUS-based medical treatment facilities. To achieve a comprehensive health care system within an austere environment, only essential health care resources will be allocated and deployed. MEPES is an operational information management system which is programmed to be the medical module in the Department of Defense (DoD) Global Command and Control System (GCCS), and is expected to integrate Theater military health care requirements and capabilities with CONUS-based health care system, military and civilian, thus providing succinct contingency medical information to decision makers in their allocation of medical resources. MEPES incorporates and enhances the functionality of the existing Medical Planning Module (MPM) which is programmed to be replaced by MEPES in the GCCS environment. MEPES will aid the medical planner at both the Joint and Service component level during crisis and deliberate planning processes and provide a monitoring capability during execution.

MEPES is an integrated kit of automated tools being developed in two phases:

- The first phase is the MEPES Core. It is designed to forecast the Theater medical resource requirements based on the warfighting scenario. The resource forecast includes:
    - The different spectrum of patients by category and sector of employment in the Theater
    - Selected health service support requirements across the battlefield as well as within the afloat battle groups
    - Assistance in developing the medical (hospital) force structure
    - Projections of the medical evacuation airlift requirements

- Planning parameters for processing patients at varying levels of conflict, and identification of health care requirements by Echelon of Care, Logistical Regions, and Operation Zones

- Planning parameters for consumption rates and flow patterns for Class VIII supplies

• The second phase is programmed to provide the planner with the capability to conduct time-phased medical sustainability analysis. This phase will provide integrated medical requirements versus capability analysis for personnel, Class VIIIA-Medical Supplies, Class VIIIB-Blood, deployable hospital, and medical evacuation assets within the entire integrated continuum of care environment.

1.3 REFERENCES

The following documents of the exact issue shown provide information concerning MEPES, its functions, and related software.

1.3.1 Government Documents

MEPES Concept of Operations. Joint Staff J-4, Joint Medical Readiness Division. 15 January 1992.

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1.3.2 Non-Government Documents

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Humphrey, Watts S. *Managing the Software Process*. SEI Series in Software Engineering, Addision-Wesley Publishing Company, Inc., New York, NY, August 1990.

Software Productivity Consortium (SPC). *Ada Quality and Style: Guidelines for Professional Programmers*. SPC, Inc., Herndon, VA. December 1992.

1.4 TERMS AND ABBREVIATIONS

All terms and abbreviations used within this document are defined at first occurrence and are consolidated for reference in Appendix A.

1.5 SECURITY

The MEPES design meets the TOP SECRET security requirements established for the GCCS Automated Data Processing (ADP) system standard software. All MEPES software programs are UNCLASSIFIED. The classification of the output (reports, files, and tables) produced by MEPES is determined by the classification of both the database and the OPLAN to which it applies. The planner is responsible for assigning the appropriate security classification to all MEPES output. Downloading information from the GCCS is accomplished under existing security guidelines. MEPES data must be protected in accordance with *DoD Directive 522.22M, Industrial Security for Safeguarding Classified Information*. All screen classification markings are in accordance with DoD standards.

SECTION 2 - SYSTEM SUMMARY

2.1 SYSTEM OVERVIEW

GCCS is intended to provide the planning community with automated tools to assist in the rapid development and appraisal of contingency plans. As an integral part of this system, MEPES assists the medical planner in quantifying the impact of a proposed OPLAN on the medical system through the automated interface of the Time-Phased Force and Deployment Data (TPFDD) file, the Medical Reference Database (MRD), Population at Risk (PAR) file, and a Medical Planning Factor (MPF) file containing OPLAN-dependent planning factors provided by the medical planner. MEPES is composed of a series of software modules that are responsible for receiving and storing user input data generated through the use of MEPES functions, more specifically, Manage PAR File, and Manage MPF File. Data supplied through the use of Manage PAR and Manage MPF collectively form the Medical Working File (MWF). The MWF works interactively when the user invokes the Execute Medical Planning Module (MPM) and Personnel Losses Generator (PLG) function of MEPES. Executing the MPM/PLG spawns the medical computations necessary for medical planning.

2.2 SYSTEM OPERATION

MEPES functions in both the online interactive and offline stand alone interactive mode. In the online mode, the medical planner interfaces with the Global Command and Control System (GCCS) server to extract TPFDD data, and JOPES Type Unit Characteristics (TUCHA) and Geographical Location File (GEOFILE) data. MEPES will extract the data from the GCCS server and load the data into the MEPES Oracle database resident on the Sun workstation. Once the medical planner has extracted required data from the server, the planner will use the offline stand alone interactive applications of MEPES to complete the manipulation of the population at risk and medical planning factors data to define a MWF. Once the MWF is defined, the planner will execute the MEPES computational processes to complete the medical requirements calculations and print the appropriate set of reports. MEPES will allow the medical planner to export the MEPES Database through the GCCS network to other MEPES sites by reestablishing the online interface.

2.3 SYSTEM CONFIGURATION

2.3.1 Hardware Environment

The MEPES runtime system is based on a Sun SPARCclassic which consists of the following minimum hardware:

- Sun SPARCclassic with 50-MHz Sun microSPARC processor

- 16-inch Mid-range color monitor with Integrated 8 bit color capability
- 32-Mbyte RAM
- SPARCclassic Type 5 Country Kit
- 1.05-Gbyte Internal Fast SCSI-2 disk
- 2-Gbyte 8mm Tape Backup (Recommended)
- CD-ROM drive
- Postscript Printer (Color Printer Recommended).

To improve performance, a more powerful Sun SPARC workstation may be used, more memory may be added, or higher capacity disk drives may be used. A postscript printer is required to print MEPES reports and screen images. If the Sun SPARC is on a network, a PC with X Server software, an X terminal, a WWMCCS Information System (WIS) Workstation (WWS) with MacX, or other workstation with X Server software connected to the network may be used to access MEPES resident on the Sun Server or workstation.

2.3.2 Software Environment

The MEPES system is designed to work with the following software products:

- Solaris 2.x
- Sun Motif Toolkit Version 1.1.2
- X Windows System Version 11 Release 5 (X11R5)
- OpenWindows 3.2
- Oracle RDBMS Version 7 with Procedural Option
- SQL*Plus Version 3.1
- Screen Machine Version 1.4 Runtime Module (distributed with MEPES).

2.4 SYSTEM ORGANIZATION

2.4.1 Interactive Organization

2.4.1.1 Driver Module. Instructions for the initialization of MEPES are in Section 3.

2.4.1.2 Reference Data - Manage Reference Data. This option permits the authorized Service/Joint database administrator to create or modify a medical reference database. This database is sub-divided first by military Service, and within Service, by specific Service Scenario and Service-approved Hospital Unit Type Codes (UTCs). Each Service may define up to 10 total scenarios for inclusion in the database. Each Scenario will be given a unique identifier. Scenarios are normally oriented towards particular OPLANs, series of OPLANs, or specific geographical areas. Similar factors in the database may differ between scenarios to reflect differing enemy threats, tempos of operation, climates, frequency of wounds, injuries, or disease diagnoses. Service Hospital UTC data will address the unit's operational characteristics and personnel staffing. In addition, the Medical Reference Database will contain planning factors that are Joint in nature such as blood consumption rates and aeromedical evacuation support, and those that are specific to a Unified CINC such as critical medical supply items. This function also allows the field medical planner to view and print the appropriate Service approved scenario reference database, and the Joint and CINC reference data.

2.4.1.3 Planning Tools. This function provides management of planning data with the PLG and MPM, supporting the other MEPES functions with data. This function consists of several sub-functions which allow the medical planner to develop medical resources requirements in support of an OPLAN.

2.4.1.3.1 Manage Population At Risk (PAR). This sub-function permits the medical planner to load a GCCS TPFDD file from the GCCS server onto a MEPES workstation. This sub-function also permits the medical planner to create or update (up to) six uniquely defined PARs. It allows the medical planner to create the Theater force structure by defining PAR quantitatively, qualitatively, temporally, and geographically in (up to) six Sectors over (up to) five Operations Zones (OPZONEs). The planner can further sub-divide the force structure within each OPZONE/Sector by functional risk level (combat forces or combat support forces). The planner may populate (activate) the OPZONEs/Sectors by any one of five methods: 1) by Force Module (FM); 2) by UTC; 3) by destination Country Code (CC); 4) by destination Geographical Location code (GEOLOC); and 5) by Unit Line Number (ULN). The PAR may either be hand-built or automatically generated through interface of the TPFDD with planner provided OPZONE/Sector and risk level assignment factors. Once created, the PAR may be updated as necessary. The hand-build function also allows direct modification or deletion of any desired PAR records. PAR records may also be temporarily excluded from or included in (by location, country, ULN, FM, and functional risk level) the medical computations to permit the modeling of isolated portions of the Theater of Operations. This function also allows the planner to view and print the PAR report.

2.4.1.3.2 Manage Medical Planning File (MPF). This sub-function permits the medical planner to create or update a MPF. It allows the medical planner to create (up to) six uniquely-defined MPFs for analysis of different alternatives to Theater medical care support operations. The MPF represents an individual planner's copy of OPLAN-dependent medical parameters required in the execution of the MPM computational routines. The field medical planner may create the MPF by accepting Service-approved scenario Reference Data (RD) which contains a wide spectrum of medical planning rates and factors. If the field medical planner encounters a

situation where some or all of a Service-approved scenario RD is inappropriate for the Theater of Operations, this sub-function allows the planner to load a scenario RD which most closely fits the environment and then allows the planner to modify those rates and factors which will bring the MPF more in line with the of Operations environment. In either circumstance, the field medical planner does not alter the Service-approved scenario RD, but rather uses it to assist in developing the MPF. This sub-function also allows the medical planner to view and print the MPF report.

2.4.1.3.3 Manage Medical Working File (MWF). This sub-function allows both the Service and Joint medical planner to create (up to) six uniquely-defined MWFs. The MWF is a specific set of casualty and evacuation planning factors applied against each OPZONE/Sector of a PAR. The Service medical planner uses the MWF to establish the relationship between a particular Service PAR and a particular Service MPF. This relationship determines what casualty rates and planning factors are to be applied against a PAR. This data is used by the MEPES PLG and MPM computational functions as input for Service unique requirement calculations. The PLG computes (compiles) personnel losses and generates a patient stream for the MPM. The MPM computes medical and personnel workloads and support requirements. The MPM uses the MWF/JMWF as the input file and output file. In addition, the Joint medical planner uses this function to create the Joint MWF (JMWF). The JMWF is used to establish the aggregated Theater level medical support requirements. The Joint medical planner uses the JMWF to establish which Service MWFs will be used to aggregate the Theater medical support requirements. The JMWF allows each Service MWF to run MEPES PLG/MPM computations and then aggregates them for the total Theater. The function also allows the Joint planner to make global changes to the Bed Dispersion rates, Personnel Replacement rates, and Evacuation Policies and Delay rates. These global changes temporarily modify the Service MWFs for the purpose of report generation. It does not permanently change Service MWFs planning factors. The Joint medical planner may use this option to conduct "what if" drills during the developoment of the Theater's Supportable Evacuation Policy (SEP). The medical planner also uses this function to view and/or print either selected or all PLG/MPM generated reports.

2.4.1.3.4 TPFDD Actions. This function provides the medical planner with the ability to translate hospital bed requirements into hospital UTC requirements. The medical planner must first create a MWF and execute the PLG/MPM computations for this MWF. Once this is done, the planner accesses the Hospital Force Records menu option. After selecting a MWF, MEPES will display a graph which depicts the time-phased bed requirements for this OPLAN. MEPES then allows the planner to enter a time-phased UTC listing of hospital UTCs whose bed mix approximates the bed mix calculated by the MPM. By adding or subtracting UTCs, the medical planner can create a hospital force structure that ensures effective utilization of medical forces. MEPES will allow the planner to print this listing for off-line analysis. This function provides the medical planner with the capability to develop medically related Non-Unit Personnel (NURP) and Non-Unit Cargo (NURC) TPFDD record fields for Strategic Medical Evacuation (STRAT MEDEVAC) records, Aeromedical Evacuation (AE) Crew Recovery records, Class VIIIA (Medical Material) Resupply records, Class VIIIB (Blood) Resupply records, and AE Related Equipment Recovery records.

2.4.1.3.5 Course of Action Analyzer (TO BE DEVELOPED)

The purpose of the Course of Action Analyzer (COAA) alternative is to assist the medical planner in performing deliberate planning or modifying ongoing operations. Projected models that may be used are the External Logistics Processor (LPX) Medical Module (LPXMED) and the macro COAA. LPXMED is under development and initial deployment. LPXMED is a simulation of medical processes that would occur within a Theater of Operations. It provides a laboratory environment to investigate medical activities and their impact on combat processes. The linkage to the MEPES environment will require further evaluation and testing. Macro COAA is a proposed global model that will conduct Theater and CONUS policy analysis.

2.4.1.3.6 Preventive Medicine Model. (TO BE DEVELOPED)

Two Preventive Medicine Models are being considered as enhancements to the MEPES system. These models are: 1) Malaria Simulation Model (MALSIM) which is a program that estimates the potential effect upon military forces in a Theater from Malaria. It is based upon environmental and endemic conditions around the world. It considers prophylactic and other preventive measures for controlling the disease and projects the effect of each toward disease control; and 2) DENGUE which is similar to MALSIM in that it estimates the threat and effect of each preventive medicine counter-measure for Dengue Fever.

2.4.1.4 Medical Threat/Intelligence. (TO BE DEVELOPED)

This function describes the environment and endemic diseases that affect the OPLAN Theater. In addition, it identifies the environment and how it may affect the health of the deploying forces. It will display data concerning the climate and topography by country or location. It will also display endemic diseases of potential military significance in the area of operations by country.

2.4.1.5 Plans & Policies. (TO BE DEVELOPED)

This function provides the medical planner with a response to a crisis by utilizing information about DoD, Services, and Department of Veterans Affairs (DVA), the National Disaster Medical System (NDMS), and Host Nation Support (HNS) agreements.

2.4.1.6 Hospitals. (TO BE DEVELOPED)

This function provides the medical planner with time-phased information about hospitals. Workload reports generated by the MPM provide the selected PAR data by period based on the TPFDD. It will provide the number of patient admissions for wounds, non-battle injuries, diseases, battle fatigue, and unconventional causes. Hospital Reports will provide information on the number and type of hospital beds required and resources available during planning, and the number of type of hospital beds operational and occupied during execution. The data are time-phased and can be displayed by Service, OPZONE and Sector. Requirements are provided

by the MPM; capabilities are user input and/or derived from the sourced TPFDD, and operational/occupied status during execution will be provided by user input.

2.4.1.7 Personnel. (TO BE DEVELOPED)

This function provides the medical planner with the estimated time-phased requirements and associated capability of aggregate and selected specialty personnel to staff hospital units required and/or committed to support an OPLAN.

2.4.1.8 Medical Logistics. (TO BE DEVELOPED)

This function provides the medical planner with the estimated time-phased requirements, capabilities and readiness status of critical medical supply items.

2.4.1.9 Blood. (TO BE DEVELOPED)

This function provides time-phased CONUS and Theater blood and blood product requirements and estimated available supplies and capabilities.

2.4.1.10 Evacuation. (TO BE DEVELOPED)

This function provides the medical planner with the estimated time-phased number of evacuees by patient and Army Services Medical Regulating Office (ASMRO) category. It also estimates the mix of litter and ambulatory patients. It will provide information on the number of evacuation missions, aeromedical crews, and air evacuation kits required to support the OPLAN, the availability of each, and the expected shortfall. It will provide information on required, available, and projected shortages of aeromedical evacuation staging facilities.

2.4.1.11 Utilities. This function provides the medical planner with a variety of capabilities to enable the planner to view medical planning and operational information to interface with the user community. The MEPES Core Utilities functionality is currently limited and only allows the medical planner to import or export the entire MEPES Database either to a tape or to a host system. The medical planner can use this function to create tape backup. This function also allows the planner to transfer the MEPES database to a host system. Future development may include a planner's checklist, smart cards, points of contact list, significant events, messages and templates to assist the medical planner.

2.4.1.12 Assessment. This function provides the medical planner with an overall estimate of the readiness and mission capabilities of OPLAN medical support and with readiness status information of individual medical units (to be developed). MEPES Core uses this function to present graphical representations of the calculated medical support requirements in the areas of: hospitalization, medical logistics, blood, medical personnel, and medical evacuation. Future development will provide Status of Resources and Training System (SORTS) detailed data for medical units sourced to support the OPLAN.

2.5 CALCULATIONS AND LOGIC STRINGS

2.5.1 General Process

Input to the MEPES MPM comes from two sources. One source is the set of user defined control and distribution factors contained in the MPF. The second source is the user generated PAR and Casualty distribution date (patient stream) generated in the MEPES PLG. The MEPES MPM produces a set of time-phased medical planning from the patient stream within casualty data produced in the PLG. The planning data output defines the distribution of casualties by: casualty type, hospital bed requirements by level of acuity, patient flow data, logistical requirements for medical supplies and blood products, potential returns-to-duty, and died-in-the-hospital data by operation zone sector for the duration of the scenario.

2.5.2 Patient Flow Simulation

One of the basic functions of MEPES is to simulate a daily patient flow for each active OPZONE/Sector. The patient flow is created by applying (up to) five categories of hospital admission rates and four categories of casualty loss rates to the forces at risk (PAR). This simulated patient flow provides the medical planner with daily admissions and evacuee levels. The personnel planner is provided with estimates of personnel losses and returns to duty. MEPES tracks these estimates separately for both combat and combat support forces to provide the planning community with estimates of resources required to support the Theater Comander-in-Chief (CINC).

2.5.3 PAR

The PAR is the beginning point of the patient flow and the basis from which medical requirements emanate. The PAR comprises selected data elements of all Force/Unit Records in the TPFDD. Non-unit personnel records (normally fillers or augmentees) are not considered because they usually just "round-out" units to their authorized wartime strengths; also, these personnel are already considered in the force/unit records. MEPES determines the actual size of the PAR by extracting the authorized personnel (wartime strength) from each force record; the number of passengers requiring transportation (PAX) for each force record is ignored because their number is already considered in the authorized personnel total. MEPES only considers sourced force records. Shortfall, on-call, or host nation provided force records resident in the TPFDD are not included in the PAR and therefore do not generate medical requirements.

2.5.3.1 Purpose of PAR. The PAR value is the basis for the MEPES MPM computational process. The MPM applies user-defined variables against each activated OPZONE/Sector of the PAR to produce health service support system requirements. The calculations are repeated daily for the duration of the OPLAN for combat and combat support forces of the PAR contained in each OPZONE/Sector.

2.5.3.2 Stratifying the PAR. The medical planner defines the PAR quantitatively, qualitatively, temporarily and geographically in (up to) six Sectors over (up to) five OPZONEs. The planner

can segregate the PAR into combat and combat support forces within each of the OPZONEs/Sectors.

2.5.3.3 Factors Affecting PAR. The actual daily PAR value is affected by three factors:

- Arrival of new units based upon the Required Delivery Dates (RDDs) contained in the TPFDD. (NOTE: Although the PAR value is based on the RDD, the planner must realize that the medical workload may actually occur from the time units arrive at the Port Of Debarkation (POD), determined by Earliest Arrival Date [EAD] and/or Latest Arrival Date [LAD]).

- Losses (Killed In Action [KIA], Missing In Action [MIA], Captured [CAPTURED], Administrative [ADMIN], Evacuees, or Died In Hospital [DIH]) are not replaced on a one-for-one basis.

- Units that "leave" on a designated day (NOTE: This is done when the planner includes a hand-built negative value in the PAR).

If none of the above three factors occurs, the PAR value does not change.

2.5.3.4 Building the PAR from the TPFDD. As stated previously, the PAR value is determined by extracting data from selected fields of force/unit records in the OPLAN TPFDD. Generation of the PAR from the TPFDD will be depicted based upon the following example:

ASSUMED SCENARIO: All forces are combat forces and assigned to OPZONE 1 - Sector A; OPLAN length is 11 days.

Drawing from the TPFDD extract (see Table 2-2), MEPES (Function -- Manage PAR) extracts the UNIT, RDD, and Authorized Strength (AUTH STR) data and computes the PAR value as displayed in Table 2-1. Assuming no losses, the PAR value for any given day equals the previous day plus the AUTH STR for the new unit arriving on the RDD. If there are no new arrivals, such as between the RDDs of C-Day and C+002 (see Table 2-1), then the PAR value remains the same as on the previous day.

Table 2-1: PAR Scenario.

TPFDD DATA			MEPES PAR	
UNIT	RDD	AUTH STR	OPLAN DAY	PAR VALUE
AAAAK	C-DAY	10000	C+000	10000
BBBBV	C+002	1000	001	10000
CCCCD	C+004	500	002	11000
DDDDE	C+005	500	003	11000

TPFDD DATA			MEPES PAR	
UNIT	RDD	AUTH STR	OPLAN DAY	PAR VALUE
EEEEQ	C+007	1000	004	11500
FFFFW	C+008	1000	005	12000
GGGGR	C+010	500	006	12000
			007	13000
			008	14000
			009	14000
			010	14500

Table 2-2: TPFDD Extract.

UNIT	RLD	LAD	RDD	PAX	AUTH STR
AAAAK	NA	INPL	C+000	NA	10000
BBBBV	C+DAY	C+001	C+002	875	1000
CCCCD	C+001	C+003	C+004	500	500
DDDDE	C+002	C+003	C+005	500	500
EEEEQ	C+004	C+005	C+007	920	1000
FFFFW	C+005	C+007	C+008	1000	1000
GGGGR	C+005	C+006	C+010	500	500

NOTE: As an example, unit AAAAK has an authorized (wartime) strength of 10,000 and is in-theater and ready-to-fight at C-Day. Unit BBBBV has an authorized strength of 1000, but only 875 PAX require movement; it is ready-to-load at the Aerial Port of Embarkation (APOE) on C-Day. Unit BBBBV arrives at the Aerial Port of Debarkation (APOD) on C+001 and is at its destination by C+002.

2.5.4 Patient Admission and Total Casualty Estimation

Having calculated the PAR values and stored them in the PAR table, MEPES then looks to the MPF for admission and casualty rates that will be applied against the PAR to determine hospital admissions for that particular OPLAN date. Specifically, these admission rates are identified as Wounded in Action (WIA), Battle Fatigue (BF), Disease (DIS), Non-Battle Injury (NBI), and Unconventional Warfare (UNCV). Additionally, so that total casualties can be

calculated, KIA, CAPTURED, MIA, and ADMIN loss rates are applied against the PAR value, and the DIH rate is applied against the WIA Admissions.

With the patient admission and casualty rates listed (Figure 2-1) the MEPES MPM is now able to compute the daily total number of patients that will be admitted to the hospital system as well as provide casualty (non-medical) estimates.

Before explaining MEPES MPM computations, a quick review of the following terms (expressed as rates) is provided:

WIA Admission Rate	The number of wounded admissions per day per 1000 PAR.
BF Admission Rate	The number of battle fatigue admissions per day per 1000 PAR.
DIS Admission Rate	The number of disease admissions per day per 1000 PAR.
NBI Admission Rate	The number of non-battle injured admissions per day per 1000 PAR.
UNCV Admission Rate	The number of unconventional battle injured admissions per day per 1000 PAR.
KIA Rate	The number of personnel killed in action per day per 1000 PAR.
MIA Rate	The number of personnel missing in action per day per 1000 PAR.
CAPTURED Rate	The number of personnel captured per day per 1000 PAR.
ADMIN Rate	The number of personnel administratively lost per day per 1000 PAR.

NOTE: Rates apply to each 1000 PAR or portion thereof. (For example, a PAR of 10599 divided by 1000 would equal 10.599. This number is then multiplied by the appropriate Admission Rate to determine the number of admissions.)

PLANNING FACTORS FOR SCENARIO:

ASSUME: Combat Intensity of Level 3 (Moderate) commencing at C-Day for OPZONE 1, Sector A, for Combat Forces only.

CASUALTY RATES (Rates apply to each 1000 PAR or portion thereof)									
DAY	**WIA**	**DIS**	**NBI**	**BF**	**UNCV**	**KIA**	**MIA**	**CAPT**	**ADMIN**
C-DAY	10	5	10	4	0	2	.5	.1	.1
C+001	10	5	10	4	0	2	.5	.1	.1
C+002	10	5	10	4	0	2	.5	.1	.1
C+003	10	5	10	4	0	2	.5	.1	.1
C+004	10	5	10	4	0	2	.5	.1	.1

OPZONE 1 Evacuation Policy: 7 Days

Percent (%) of Evacuees By Category for 7 Day Evac Policy				
WIA	**DIS**	**NBI**	**BF**	**UNCV**
95%	52%	52%	25%	0

Evacuation Delay: 3 Days

DIH Rate: 10 Percent

Percent Losses Not Replaced For Combat Forces 20 % (C-Day through C+015)

Figure 2-1: Medical Planning Factors.

2.5.4.1 Calculating Casualty (Non-Medical) Estimates. Casualty estimates are calculated daily by casualty category (KIA, MIA, CAPTURED, and ADMIN) starting at 0001 hours each day. To compute (non-medical) casualty estimates, the following formula is used:

PAR (in 1000s) x (KIA, MIA, CAPTURED, or ADMIN loss rate) = KIA or MIA or CAPTURED or ADMIN losses for that specific day.

By applying KIA, MIA, CAPTURED, and ADMIN loss rates (respectively) of 2.0, 0.5, 0.1, and .1 per 1000 PAR or portion thereof to the C-Day PAR of 10000, MEPES calculates the following non-medical casualties for C-Day:

KIA	MIA	CAPTURED	ADMIN
20	5	1	1

Total losses will add the KIA, MIA, CAPTURED, and ADMIN results with Evacuees and DIH times the percentage of personnel not to be replaced rate. Evacuees (EVAC), DIH, and Percent not to be replaced calculations will be discussed later in this Section.

2.5.4.2 Basic Concepts. The following basic concepts are used by the MEPES MPM to determine the daily hospital admission estimates and other related planning rates.

- Admissions are compiled daily
- Multipliers are applied to quantify DIH, Evacuees EVAC, and Return-To-Duty (RTD)
- Algorithms are then applied to define the temporal aspect of patient flow
- Bed Occupancy is compiled at the end of the day
- Bed Requirements for the day are calculated by applying a dispersion factor to Bed Occupancy.

2.5.4.3 Calculating Admissions. Admissions are calculated daily by patient group (WIA, BF, DIS, NBI, and UNCV) starting at 0001 hours each day. To compute admissions, the following formula is used:

PAR (in 1000s) x (WIA, BF, NBI, DIS, or UNCV admission rate) = WIA or BF or NBI or DIS or UNCV admissions for that specific day.

By applying WIA, DIS, NBI, BF, and UNCV admission rates (respectively) of 10, 5, 10, 4, and 0 per 1000 or portion thereof to the C-Day PAR of 10000, MEPES calculates the following admissions for C-Day:

WIA	DIS	NBI	BF	UNCV
100	50	100	40	0

MEPES tracks two type of admissions: 1) Local Admissions; and 2) Transfer Admissions. Local admissions are defined as admissions to a hospital from within the same OPZONE/Sector. Transfer Admissions are defined as admissions of evacuees who transfer into an OPZONE/Sector

from other OPZONEs/Sectors. Total Admissions are the sum of the "local" admissions plus "transfer" admissions. Each type of admission is calculated separately. Once "Transfer" admissions are accounted for, they fall under the Evacuation Policy of the new OPZONE and have the appropriate evacuation percentages applied.

2.5.4.4 Dispositions. For every admission there are only three disposition actions that can occur:

- An admission (patient) can die in the hospital (DIH),
- An admission (patient) can be evacuated (EVAC)
- An admission (patient) can return to duty (RTD).

RULE

- All admissions to hospitals are at the beginning of the day (0001) and all dispositions (RTD, DIH, EVAC) are at the end of the day (2359).

2.5.4.4.1 Calculating Died-In-Hospital (DIH). DIHs are calculated by multiplying the total number of initial daily WIA admissions times the DIH percentage rate. Therefore, only "Local" WIA Admissions apply the DIH rate. Transfer WIA admissions do not apply the DIH rate. To compute the DIH the following formula is used:

DIH % rate x WIA initial admissions per day = DIH

By applying the DIH rate to the C-Day WIA initial admissions, MEPES calculates the number of DIHs for C-Day as follows:

10% (DIH % rate) x 100 (WIA initial admissions) = 10 DIHs

Determining DIHs requires not only the quantitative step discussed above, but also the following temporal step. Of the WIA admissions (patients) who died in the hospital, 50 percent will die on the first day of admission, 25 percent will die on the second day, and 25 percent will die on the third day. Although a DIH rate is specified, its value does not decrease the number of WIA admissions. For purposes of MEPES MPM calculations, DIHs do not consume medical resources. By applying this temporal step to the above example, the following distribution would occur:

C+000 DIHs = 5 C+001 DIHs = 3 C+002 DIHs = 2

NOTE: DIH RATES are applied to initial WIA admissions. MPM 2.0 uses the term DIH synonymously with Died-of-Wounds (DOW). Although the difference was recognized by the JOPES MPM 2.0 developers, the DIH RATES for disease and non-battle injuries are very low, approaching arithmetic insignificance. The decision was made to simplify calculations by applying hospital death rates only to initial WIA admissions.

2.5.4.4.2 Calculating Evacuees (EVAC). EVAC workload represents the number of patients to be moved from one OPZONE/Sector to another. The movement of evacuees can be from one OPZONE/Sector to one rearward OPZONE/Sector, or in some cases more than one rearward OPZONE/Sector. In either case, the evacuated patients represent an increase in patient care requirements and are considered admissions for the receiving OPZONE/Sector. The number of hospital admissions to be evacuated from an OPZONE/Sector is based upon the following variables:

Evacuation Policy (EP)

Percent of admissions for each admission category (WIA, DIS, NBI, BF, UNCV) to be evacuated as defined by medical planner in the MPF file.

To compute the evacuees, the following formula is used:

Evacuation Percentage by admission category (WIA, DIS, NBI, BF, UNCV) for a specific EP times the number of daily admissions by category equals the EVAC by category.

EVAC % (admission category) for a specific EP day (EP days between 2 through 60 inclusive) X Total number admission by category = Total EVAC by category

NOTE: WIA Evacuees are determined after first subtracting DIHs from the initial WIA admissions.

By applying the example rates (see Figure 2-1) to the C-Day admissions, the number of evacuees from OPZONE 1, Sector A, for Combat Forces are as follows:

95 % of [100 admissions - DIHs]	= 85	
52 % of 50 DIS admissions	= 26	
52 % of 100 NBI admissions		= 52
25 % of 40 BF admissions	= 10	
0 % of 0 UNVC admissions	= 0	

2.5.4.4.3 Calculating Returns to Duty (RTDs). RTDs are calculated by taking the total number of daily admissions (all admission categories) minus the sum of the total number of evacuees and the total number of DIHs. RTDs are calculated separately for Combat and Combat Support forces. The following formula is used to compute the RTDs:

RTDs = ADM - [EVAC + DIH]

By applying the example data, the following number of personnel would be returned to duty from C-Day admissions:

RTDs = ADM (290) - [EVAC (173) + DIH (10)] = 107 RTDs

Determining RTDs requires not only the quantitative step discussed above, but also a temporal step. Once the number of RTDs is determined, it is expected that they will be distributed over some period of time rather than "dumped" all at once. Since patients can be returned to duty within an OPZONE other than the one they were admitted under, MEPES tracks two types of RTDs. The first type is considered a "Local RTD" who is a patient that is admitted and returned to duty in the same OPZONE. The second type is considered a "Transfer RTD" who is a patient that was admitted in one OPZONE and because of evacuation policy is admitted to a rearward OPZONE and is expected to be returned in that OPZONE. MEPES applies a separate formula for each.

For "Local RTDs", RTDs are distributed based upon the following application: divide the number 1 by the OPZONE's Evacuation Delay (ED) minus the number one (1). The following formula depicts this process:

$$\frac{1}{ED - 1}$$

By using the example data, the 107 RTDs would be evenly distributed over a period of 2 days, starting after the day of admission, or 54 on C+001, and 53 on C+002.

For "Transfer RTDs", RTDs are distributed based upon the following application: Divide the number 1 by the result of subtracting the sum of all previous EDs from the current OPZONE's EP minus one (1). The following formula depicts this process:

$$\frac{1}{[EP - \text{Sum Previous EDs}] - 1}$$

For example, when OPZONE 2's EP equals 10 and OPZONE 1's ED equals 3, then the equation would be: $1 / [10 - 3] - 1 = 1 / [\ 7\ ] - 1 = 1/6$. Transfer admission RTDs are, therefore, distributed equally over six 6 days. This accounts for treatment received by the patient in previous OPZONEs. If the calculated OPZONE RTD distribution rate equals either a zero (0) or a negative number, then it is expected that Patients are not to be returned to duty within this particular OPZONE. This OPZONE is then considered a "flow through" OPZONE. The calculated Transfer RTDs are then added back as evacuees and will be moved accordingly.

There is no need for the MEPES MPM to add RTDs back into the PAR because admissions are not considered to be losses until evacuated from the OPZONE/Sector. However, because projected RTDs are never subtracted from the PAR, they do very slightly inflate the PAR and associated medical support requirements.

2.5.4.4.4 EP and ED. EPs determine the distribution of patients and their corresponding medical requirements throughout the medical system. The planner is required to define EPs for each OPZONE starting as of C-Day, with changes where appropriate over the duration of the OPLAN, giving consideration to such factors as the quantity of patient care facilities, desired number of RTDs, and anticipated replacement rates. Patients who cannot be treated within the OPZONE's designated EP will be evacuated, normally, one OPZONE rearward where they then come under the EP of the receiving OPZONE. The MEPES MPM only accounts for patients who

move between and not within OPZONEs. EPs are defined as of C-Day for each active OPZONE and may be changed up to 23 times per OPZONE at the discretion of the planner. The ED represents the number of days after admission in an OPZONE that a patient who has been identified for evacuation must wait before actually being evacuated. In determining EDs, the planners should consider both patient stabilization requirements and the availability of evacuation transportation assets. EDs are defined for each EP time period starting as of C-Day for each active OPZONE and any additional incremental changes similar to EP per OPZONE. EDs must be at least 1 but not greater than the evacuation policies to which they correspond. To illustrate this process, the following example (Table 2-3) has been developed.

Table 2-3: Evacuation Policies.

OPZONE	Theater/CONUS	EP/ED
1	T	7/3
2	T	15/5
3	T	30/7
4	C	60/10
5	C	60/59

The OPZONE's EP specifies the percentage of patients admitted under each admission category who will be evacuated from that OPZONE. One notable exception is the WIA admission category which first applies the DIH rate to the initial WIA admissions. The number of WIA admissions minus the DIH becomes the number of WIA admissions that the evacuation percentage is applied against. These patients will be evacuated to a rearward OPZONE(s) after receiving care in the losing OPZONE equal to that OPZONE's ED. The remaining number of patients in each admission category are determined to be RTD. They will be distributed over a period of calculated days starting after the day of admission.

When the evacuee arrives in a rearward receiving OPZONE, the patient now falls under the EP percentage for that OPZONE. This OPZONE's EP percentage is applied against these transfer admissions which again states that a specific percentage of these patients will be evacuated. Those patients identified for evacuation will be evacuated to a rearward OPZONE(s) after receiving care in the losing OPZONE equal to that OPZONE's ED. The remaining number of patients in each admission category are determined to be RTD candidates within this OPZONE. The transfer admission RTDs will be distributed over a period of days as calculated starting after the day of admission. The following rules are used by MEPES during the computational process.

RULES

- An OPZONE EP is inclusive of the previous OPZONE(s) EPs. For example, in a Theater with three Theater OPZONEs and one CONUS OPZONE, the Theater

EP is 30 days (total), the EP in OPZONE 1 is 7 days, and the EP in OPZONE 2 is 15 days (which includes the 7 days in OPZONE 1). The Theater EP (which is the same as OPZONE 3) of 30 days includes the OPZONE 1 and OPZONE 2 EPs.

- EDs are additive. In this example a patient who can not be RTD in the Theater within 30 days (the Theater EP) will spend at least 15 days in the Theater receiving treatment (3 days in OPZONE 1, 5 days in OPZONE 2, and 7 days in OPZONE 3), before being moved to the first CONUS OPZONE (OPZONE 4).

- ED = Stabilization Time + Administrative Processing Time + Awaiting Conveyance Time. It does not include travel time between OPZONEs.

- Each patient is allotted a full day or days of care in the hospital system before moving on to the next level of care.

- Patients are, in effect, admitted at 0001 hrs and discharged at 2359 hrs. The "delay clock" starts after the "admission/stabilization day." For care requirements calculations, the patient consumes resources on each "admission/stabilization day" but not on the "travel day" between OPZONEs.

- EDs must be at least 1 but cannot be greater than the EP to which they apply.

- The EP in any given OPZONE must be equal to or greater than the EP in a preceding OPZONE.

2.5.4.4.5 Calculating Total Losses. To calculate the total number of daily losses, the following formula is used:

Total Daily Losses = (KIAs + MIAs + CAPTURED + ADMIN + EVACs [WIA Evacs + DIS Evacs + NBI Evacs + BF Evacs + UNCV Evacs] + DIHs) X percent of personnel losses not replaced.

2.5.5 Summary

The information contained within this section accounts for the beginning calculations that the MEPES MPM performs. The calculations and logic strings described above are repeated for each day of the OPLAN scenario, for each active OPZONE/Sector, and for each unit designated as Combat or Combat Support.

2.6 SYSTEM PERFORMANCE

2.6.1 Input

The MEPES MPM will process MWFs at two levels. At the Service Component level, the MEPES MPM will process one OPLAN MWF for any planner defined time length up through 180 OPLAN days. At the Joint level, the MEPES MPM will process up to four Service Component MWFs for any planner defined time length up through 180 OPLAN days.

2.6.2 Output

Output can be directed to a printer as formatted reports. These reports provide working papers used by the planner during plan development.

2.7 DATABASE INTERFACES

MEPES interfaces with an OPLAN-unique database file and Summary Reference File (SRF), the GEOFILE and the TUCHA to either create or update a MWF.

2.7.1 OPLAN Database

The OPLAN database contains an OPLAN-dependent force list (TPFDD) constructed and tailored by GCCS Force Requirements Generator functions. The TPFDD may also contain non-unit supply, non-unit personnel resupply, and replacement records. In interfacing with the TPFDD, MEPES extracts only data from legitimate force records that contain personnel who are considered part of the PAR. TPFDD data elements used by MEPES include Service, ULN, UTC, Force Description, Unit Destination, Destination RDD, and Units Authorized Personnel Strength.

2.7.2 Specified GEOFILE File (GCCS)

This file contains standard worldwide geographical data keyed to Geographic Location Code (GEOLOC). MEPES extracts location name, country/state name, and installation type code from the GEOFILE for inclusion in the OPZONE Planning Worksheet and the PAR records. MEPES also uses the GEOFILE to edit GEOLOCs entered by the planner into MEPES.

2.7.3 TUCHA File (GCCS)

This file contains movement characteristics for standard deployment unit types and force description data for non-deployable unit types.

2.7.4 Medical Reference Database (MRD)

The MRD is subdivided first by military Service, Joint, and CINC reference data. Within each military Service, it is further subdivided into Service Scenario and Service Hospital UTC data. Each Service may define any number of scenarios for inclusion in the database. Each Service Scenario Database is given a unique identifier. Service Hospital UTC data address the Service approved generic hospital UTCs and are not given any further identification. One Joint Database will be available and each warfighting CINC may define data for inclusion in the

database. Scenarios are normally oriented toward particular OPLANs, series of OPLANs, or specific geographical areas. Similar factors in the database may differ between scenarios to reflect differing enemy threats, tempos of operation, climates, frequency distribution of wounds, injuries, or disease diagnoses. Service Hospital UTC data provides details on the unit's operational characteristics and personnel staffing. Joint data is that which is not tied to a specific areas and may be employed the same throughout the world. Items such as blood and blood product consumption rates, and AE conveyance factors fall into such a category. CINC data is currently defined as those medical supplies determined by the CINC as critical to successful operations. The designated Service, Joint, and CINC database planner may create and update any data element within the MRD as necessary within their permissions authority.

2.8 GENERAL DESCRIPTION OF INPUTS, PROCESSING, OUTPUTS

2.8.1 Inputs

Once the planner has entered the MEPES system, planner inputs are in the form of responses to computer-initiated dialog required to execute each selected interactive software module properly. Input data may be considered as functionally divided between force scenario (PAR records), medical planning (MPF records) and utility routine information. Specific input required by each interactive software module is described in detail in the appendices.

2.8.2 Processing

The interactive software execution sequence is determined by the planner selection and any accompanying prerequisite creation, saving, and loading of data. The on-line processes cannot be initiated until both the PAR and MPF records have been created and saved as a MWF. Once initiated, the on-line processes will read the MWF and extract the appropriate corresponding data from the PAR and MPF. Data from this input will be processed through a series of algorithms and the computed results will be written to a series of reports (medical requirement or evacuation policy analysis).

2.8.3 Outputs

MEPES produces two categories of reports. The first category is the MEPES Function Report which is used in recording planner input parameters. The second category is the MEPES PLG/MPM Standard Report which records the results of PLG/MPM computations. The reports listed below are discussed in detail and illustrated in the appendices of this manual.

2.8.3.1 OPZONE Planning Worksheet. This report provides a list of all unique unit destination locations found in the GCCS TPFDD with accompanying descriptive information (see Appendix D).

2.8.3.2 Rejected Records Report. This report provides a list of all force records from the GCCS TPFDD that cannot be processed by MEPES with an explanation of deficiencies (see Appendix D).

2.8.3.3 PAR Report. This report provides a formatted listing of the information in the PAR records (see Appendix D).

2.8.3.4 Medical Planning Factors Report. This report reveals all the planner-defined medical parameters contained in the MPF records that correspond to the scenario selected in the MPF records (see Appendix E).

2.8.3.5 Medical Reference Database Report. This report reveals all data contained in the Medical Reference Database (see Appendix C).

2.8.3.6 Personnel Losses Report. This report reveals the Theater troop strength on the last day of each time interval. It displays losses by KIA, MIA, ADMIN, CAPTURED, and DIH for combat and combat support personnel per time interval. It displays this data at the OPZONE/Sector, or OPZONE, or Theater level of detail (see Appendix F).

2.8.3.7 Hospital Admissions Report. This report reveals the time-phased admissions by patient class (by WIA, DIS, NBI, BF, and UNCV) for combat and combat support personnel per time interval. It displays this data at the OPZONE/Sector, or OPZONE, or Theater level of detail (see Appendix F).

2.8.3.8 Returns to Duty Report. This report reveals the time-phased number of combat and combat support personnel returned to duty by OPZONE/Sector, or OPZONE, or Theater level of detail (see Appendix F).

2.8.3.9 Evacuees Report. This report consists of three sections. The first section reveals the time-phased number of evacuees (both combat and combat support) by patient class (WIA, NBI, DIS, BF, and UNCV) by OPZONE/Sector, or OPZONE, or Theater level of detail. The second section displays the expected distribution of the total number of evacuees into the 13 ASMRO patient categories. The final section displays the number of expected litter versus ambulatory evacuees. All sections display data for the duration of the OPLAN (see Appendix F).

2.8.3.10 Hospital Bed Requirements. This report reveals the peak demand for beds by acuity levels, the peak demand for combined beds and the average combined beds during the reporting time interval. This report displays the data by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.11 Hospital Bed Availability Report. This reports shows the time-phased number of beds available by acuity level and by combined beds by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.12 Operating Room Capabilities Report. This report reveals the time-phased number of operating rooms available by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.13 Class VIIIA - Medical Supply Report. This report reveals the time-phased medical supply requirements by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.14 Class VIIIB - Blood & Blood Products Reports This report reveals the time- phased blood and blood product requirements by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.15 Anesthesiologist Capabilities Report. This report reveals the timed-phased availability of Anesthesiologists by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.16 Total Surgeons Capabilities Report. This report reveals the time-phased total availability of all (total) Surgeons by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.17 General Surgeons Capabilities Report. This report reveals the time-phased availability of General Surgeons by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.18 Orthopedic Surgeons Capabilities Report. This reports reveals the time- phased availability of Orthopedic Surgeons by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.19 Neurological Surgeons Capabilities Report. This report reveals the time-phased availability of Neurological Surgeons by OPZONE/Sector, by OPZONE or by Theater level of detail (see Appendix F).

2.8.3.20 Thoracic Surgeons Capabilities Report. This reports reveals the time-phased availability of Thoracic Surgeons by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.21 Urologists Capabilities Report. This report reveals the time-phased availability of Urologists by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.22 Ophthalmologists Capabilities Report. This report reveals the time-phased availability of Ophthalmologists by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.23 Obstetrician & Gynecologists Capabilities Report. This report reveals the time-phased availability of Obstetricians & Gynecologists by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.24 Psychiatrists Capabilities Report. This report reveals the time-phased availability of Psychiatrists by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.25 Other Physicians Capabilities Report. This report reveals the time-phased availability of Other Physicians by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.26 Total Physicians Capabilities Report. This report reveals the time-phased availability of all categories of Physicians by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.27 Total Dentists Capabilities Report. This report reveals the time-phased availability of all categories of Dentists by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.28 Oral-Maxillofacial Surgeons Capabilities Report. This report reveals the time-phased availability of Oral-Maxillofacial Surgeons by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.29 Total Nurses Capabilities Report. This report reveals the time-phased availability of all categories of Nurses by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.30 Operating Room Nurses Capabilities Report. This report reveals the time-phased availability of Operating Room Nurses by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.31 Nurse Anesthetists Capabilities Report. This report reveals the time-phased availability of Nurse Anesthetists by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.32 Clinical Nurses Capabilities Report. This report reveals the time-phased availability of Clinical Nurses by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.33 Total Medical Enlisted PersonnelCapabilities Report. This report reveals the time-phased availability of all categories of Medical Enlisted Personnel by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.34 Total Dental Enlisted Personnel Capabilities Report. This report reveals the time-phased availability of all categories of Dental Enlisted Personnel by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.35 Hospital Beds Required versus Hospital Beds Available Report. This report reveals the time-phased bed requirements versus beds available by OPZONE/Sector, by OPZONE, or by Theater level of detail (see Appendix F).

2.8.3.36 Evacuation Policy Graph. This graph reveals the quantity of beds required to support the Joint medical planner's selected standard evacuation policy versus the beds available for each OPZONE and Theater. This graph is used to assist in determining the supportable evacuation policy (see Appendix F).

2.8.3.37 Aeromedical Evacuation Airframe (Aircraft) Equivalents Report. This report reveals the time-phased requirements for aeromedical evacuation airframe equivalents by OPZONE, or by Theater level of detail. It further defines the type of AE mission (Tactical or Strategic), and the type of AE role (Dedicated or Retrograde) for the duration of the OPLAN (see Appendix F).

2.8.3.38 Aeromedical Evacuation Crew Member Requirements Report. This report reveals the time-phased requirements for aeromedical evacuation crew members for the Theater based upon the type of AE mission (Tactical or Strategic) and the type of AE role (Dedicated or Retrograde) level of detail (see Appendix F).

2.8.3.39 Aeromedical Evacuation Staging Facility Requirements Report. This report reveals the time-phased requirements for Mobile Aeromedical Staging Facilities (MASFs) and Aeromedical Staging Facilities (ASFs) by OPZONE, or by Theater level of detail (see Appendix F).

2.8.4 Input/Output Relationships

Table 2-4 displays information on the relationship of input data to output data.

Table 2-4: MEPES Input/Output Relationships.

MEPES INPUT/OUTPUT RELATIONSHIPS		
INPUT	**OUTPUTS AFFECTED**	**RELATIONSHIP**
Combat Intensity/OPTEMPO	Admissions: (WIA,BF,DIS,NBI,UNCV) KIAs MIAs CAPTURED ADMIN losses DIHs Evacuees Care requirements Bed requirements	

MEPES INPUT/OUTPUT RELATIONSHIPS		
INPUT	**OUTPUTS AFFECTED**	**RELATIONSHIP**
Evacuation Policy	Evacuees Returns to Duty Care requirements Bed requirements	Longer evacuation policies drive fewer evacuees and increase bed requirements, care requirements and returns to duty.
Evacuation Delay	Evacuees Care requirements Bed requirements	Total evacuees are only affected temporally, not quantitatively; the greater the delay, the later evacuees are manifest. The longer the delay, the longer beds are occupied, increasing bed and care requirements.
Losses Not Replaced	Admissions DIHs KIAs MIAs CAPTURED ADMIN Evacuees RTDs Bed requirements	Replacement of less than 100% of losses reduces the PAR, thereby decreasing medical requirements.
Admission Rates	Admissions Care requirements DIHs Evacuees RTDs Bed requirements	Higher admission rates increase all other output.
Bed Dispersion	Beds required	Higher dispersion drives a higher bed requirement. Does not impact other requirements.

SECTION 3 - PROCESSING REFERENCE GUIDE

3.1 SYSTEM CONVENTIONS

The following are system conventions used throughout this UM. A basic understanding of the Sun Sparc keyboard and Motif is necessary to execute and work with MEPES.

$MEPES_HOME	Home directory set up by the user during MEPES installation.
$MEPES_HOST_NAME	Name of GCCS Server.
Click	Place the pointer of the mouse on the object and press the left mouse button. Click twice to select.
Press	To press a button, tab to the object and press the space bar.
text	Italicized text represents typed user input or field values.
FIELD	Capitalized text represents field names.
<Menu Option>	Represents a menu option.
button	Bold text represents a button on a dialog box.
"< data record >"	Represents a data record located in a List box
Select a *<Menu Option>*	Place the mouse pointer on the menu choice, press and hold the right mouse button, move the mouse to the desired option (Motif will highlight the options as the mouse pointer moves over them), let up on the right mouse button to select.
Select a FIELD	Place the mouse pointer on the field, press the left mouse button.
Select a "<data record>"	Place the mouse pointer on the List box data record, press the left mouse button. Click twice to select.
%	Oracle wild card.

3.2 ACCESSING THE SYSTEM

The user invokes the MEPES executable from the GCCS desktop by clicking on the icon that represents MEPES.

The Oracle product controls MEPES access to the database. Two types of MEPES users are defined: medical planners and medical database planners (MEPES DBAs). To access MEPES, a user's database account must be granted the Oracle role that corresponds to one of these types of users. For more detailed information on initiating MEPES, refer to Appendix B.

Access to MEPES functions and data are enforced using the access permissions granted to the database accounts via roles. Menu options that the planner does not have access to will also be grayed out. For example, if the medical planner has logged in to MEPES as a Service User, then MEPES will grey out all Joint Service menu options. Conversely, if the medical planner has logged in as a Joint User, then MEPES will grey out any Service menu options.

3.3 USER INTERFACE CHARACTERISTICS

3.3.1 Common User Interface Components

The MEPES screens (or panels), have been designed to ensure a consistent look-and-feel. All of the panels possess a set of common elements: panel title, classification labels, and function key buttons. The classification labels reflect the classification level designated by the user in the MEPES Main Menu panel. MEPES uses the following color scheme to differentiate between security classifications: YELLOW - Top Secret; RED - Secret; BLUE - Confidential; and GREEN - Unclassified.

The function key buttons indicate the functions provided. Buttons that are "grayed out" indicate that the corresponding function is not available. MEPES supports the following function keys:

F1	[Help]	User is provided access to panel (window) level notes.
F2	[Notes]	User is provided access to textual note capability.
F3	[List]	User is provided a list of appropriate values or data, where appropriate.
F5	[Dictionary]	User is provided access to the dictionary capability.
F6	[Previous Record]	User is allowed to move to a previous record.
F7	[Next Record]	User is allowed to move to the next record
F8	[Review]	User is provided access to a sub-panel as applicable.
F9	[Print]	User is allowed to print the panel (window) displayed.

F10	[Back]	User is allowed to move one panel backwards.
F11	[Commit]	User is allowed to save data to the database.
F12	[Exit]	User is allowed to exit to the Main Menu level within an application.

3.3.2 Common Utility Functions

The Help (F1),Textual Notes (F2), Dictionary (F5), and Print (F9) functions are available throughout MEPES. The List Values (F3) are provided where applicable. These functions provide the following capability.

3.3.2.1 Help. Help text is available for each of the screens (or panels) in MEPES. When requested by the user, help text is displayed in a read-only text box. If the text exceeds the visible portion of the text box, a scroll bar will be provided, allowing the user scroll through the text. A Print button is also provided, allowing the planner to print the help text. If no help information exists for a particular panel, MEPES will display an error message indicating that no help file can be found.

Each panel is associated with a single help file. MEPES stores help data in text files to minimize storage and performance associated with the database. The help files are stored in the $MEPES_HOME/help directory. To update the help information, the MEPES system administrator must edit the help files using a text editor.

3.3.2.2 Textual Notes. The Textual Notes function allows the medical planner to enter notes and comments while executing the MEPES application. A set of notes can be created for each service scenario for each main MEPES module (i.e., PAR, MPF, MWF, or RD). The planner may use this function as a journal to keep track of the dates and descriptions of modifications to data in each module. This allows the planner to maintain necessary background to support planning changes.

Each set of notes is stored in a separate text file in the $MEPES_HOME/admin_notes directory. When the planner requests this function, the *textedit* program provided by the Motif runtime system is invoked, allowing the planner to edit the appropriate file.

3.3.2.3 Dictionary. MEPES provides the user with a list of standard acronyms and definitions. It also provides the user with the capability to add, modify, or delete terms and corresponding definitions within the dictionary database. This allows the medical planners to customize their own unique list of dictionary items. While in the Dictionary mode, the user may search by entering "Letter" or by entering "Blank" to load the total dictionary. Permission to modify terms may be controlled and enforced by granting appropriate permissions to the MEPES database user accounts as determined by each MEPES site. The MEPES dictionary also includes the most current Joint Pub 5-03.2, *Annex Q, Planning Guidance -- Medical Services.* Access to Annex Q is done by clicking the F5-Dictionary function key.

3.3.2.4 Print. The F9-Print capability allows the planner to print a bitmap image of the panel where the function was invoked. The function will automatically invoke the *xwd* and *xpr* X Window utility programs to capture and print the bitmap image of the panel. Since *xpr* converts the bitmap image to postscript, a postscript printer must be used.

3.3.2.5 List Values. Where applicable, the List Values function is provided. The function provides the user with a list of valid values for a particular field. The valid values are displayed in a pop-up list box. The system will automatically populate the associated field with the selected value.

The planner is given the capability to filter the list of values. To obtain a list of values following a certain pattern, simply enter the filter in the field prior to pressing the **F3-List** button. The pattern or filter can be designated using the Oracle wildcard characters.

3.3.3 Buttons

MEPES uses three types of buttons: 1) TOGGLE; 2) RADIO; and 3) PUSH. The TOGGLE Button is used when selection of a particular function is a choice between two parameters. For example, within the PAR module, the planner would use a TOGGLE button to designate a Unit as a Combat or Combat Support. In this case, clicking on (pushing in) the TOGGLE button tells MEPES to designate this unit type as Combat Force. By clicking on this TOGGLE button the designation changes to Combat Support. The RADIO Button is used when there is a multiple selection. For example, in the MPF module, the planner would use the RADIO button to chose among the five OPZONEs to enter the personnel replacement rates. The planner would click on (push in) the RADIO button for the OPZONE that the planner wanted to work with. To change OPZONEs, the planner would then simply click on another OPZONE RADIO button. The PUSH button is used when there is an action required. For example, in the PAR module, the planner would use the PUSH buttons (ADD/MODIFY/DELETE) to create or add a patient movement record, to change data within one of these data records, or to delete the data record. Other examples are the ASSIGN/UNASSIGN buttons used to place forces in specific OPZONEs/Sectors during the PAR build. In general, the PUSH button is used when an action within a List Box is necessary.

3.3.4 Data Field Colors

MEPES uses different color patterns to indicate the capability of certain data fields within the window workspace area. The following guidelines apply.

Red	Output field only. Can be highlighted but no other activity is allowed.
White	Input field only. Can be highlighted and data can be entered.
Yellow	Invalid data entry. Will appear when the user attempts to commit data to the database and MEPES has conducted validation screening. A KEY Field.

3.3.5 List Boxes

In general, MEPES provides three modes of operation for the List Boxes used within the applications: Add, Modify, and Delete. In all three cases, the operation is applied to the data currently in the input registers. That is, the record or list entry to be manipulated must be displayed in the input registers. The input registers are to be populated either by user input or selection from the corresponding list box. In order to select an entry in the list box and populate the input register, the user must double-click on the desired list box entry. The processing steps associated with each of the three modes are as follows:

ADD:

- The user may add a new entry to the list by first entering all values in the input register, then press the **Add** button. An alternative would be to select an entry in the list to populate the input register. Modifications can then be made to the primary key field(s) and/or other relevant fields. Then the **Add** button may be pressed.

- After the **Add** button has been pressed, the new entry should be inserted after the currently highlighted list box entry. If no entry is currently highlighted, add the item to the top of the list.

- In case a data record with a duplicate primary key(s) already exists, an error message is displayed and the data remains in the input fields.

- As with all modes of operation, the input register should be cleared after the completion of the operation.

MODIFY:

- To modify a data record entry, the user must double-click on the desired entry in the list box. The selected entry will then appear in the input registers. The user may then edit any field other than the primary key in the record. After all changes have been made, the user must then press the **Modify** button to update the corresponding entry in the list box.

- The system will verify that the primary key of the record in the input register matches that of the current record in the list box. If they do not match, an error message is displayed indicating that the operations cannot be processed specifying the reason why.

- As with all modes of operation, the input register should be cleared after completion of the operation.

DELETE:

- In order to delete the data record, the user must first highlight the desired record, then press the **Delete** button. To highlight the record, click once on the record.

Note that key fields in the list box are indicated by labels with YELLOW text. All other field labels are WHITE. Key fields must be unique. Validation will be performed to ensure that the key fields are unique.

3.3.6 MEPES Database Utilities

The MEPES Database Utilities provides the user with the capability to transfer the Medical Reference Data files between sites. It also provides the capability to transfer a MWF and its associated PAR and MPF files. This is accomplished through the process of importing/exporting the Orcale database tables. The data file(s) can be transferred from site to site either by use of the File Transfer Protocol (FTP) on the GCCS network or by tape. Finally, MEPES provides a capability to accomplish database backups/restores using a process similar to the transfer process. When this capability is invoked, the entire MEPES database is archived and restored. That is, the user does not have the option to backup selected database tables or data.

3.4 MEPES SYSTEM LIMITATIONS

MEPES operates in the X Window System environment under Sun Solaris 2.x. The X Window System is an operating system and vendor-independent graphical networking windowing environment. It provides a number of essential features such as portability, network transparency, large hardware backing and shared resources based on a client-server relationship. The Sun Motif window manager is also used to support windowing capabilities. Screen Machine is used to provide the GUI capabilities for MEPES. While this combination provides an effective and user-friendly environment, it does create various system limitations within MEPES functionality. These limitations are provided as follows.

- Any fields containing a floating point value must begin with a leading zero. If a leading zero is not supplied, the system will beep when the decimal point is pressed and prevent the user from entering it.

- When deleting the contents of a field with a floating point value, the deletion **must** occur from right to left using the [Backspace] key. If the [Delete] key is used to delete the floating point value from left to right, an audible beep will sound and the next keystroke will result in the termination of MEPES. This is a bug in Motif.

- When a field is flagged as invalid, the user is not permitted to leave the field until it has been corrected. Currently, the user is prevented from tabbing to the next field, but is able to use the mouse to click on another field and avoid this check.

- List boxes have an intermittent problem when displaying large lists. Occasionally, the system will abort with either a "constraint_error" or a "storage_error" when a list approximately 60,000 records in size (5 MB) or larger is displayed.

- When displaying a list of possible values for a field, the keyboard's F3 function key must be used. Clicking on the panel's **F3-List** button will not perform the desired function. The **F3-List** button has been disabled because the operating system needs to determine which field had the input focus. When clicking on the **F3-List** button, the input focus will change to the **F3-List** button, thus losing focus on the original field. Using the F3 function key, however, will not change the field input focus.

- When using the menu short-cut keys, the user must use the Sun Meta ♦ key rather than the Alt key to access the short-cut keystroke. Using the Alt key may cause the system to hang.

- The [Num Lock] and [Caps Lock] keys must be inactive during MEPES execution. If these keys are active, MEPES will become unstable.

- Since the system has no way of knowing which field(s) on a panel have been modified, all fields must be processed. This may cause the process to take longer and the user may have to back out of unnecessary panels.

- When using the "tear-off" menus, sub-menu selections from the "tear-off" menu may be inaccessible. To correct the problem, dismiss the "tear-off" menu(s) and make the selections from the menu on the menu bar of the appropriate panel.

3.5 MODES OF OPERATION

MEPES allows the medical planner to operate in one of three basic modes. The planner is either CREATING , MODIFYING, or VIEWING data.

The MEPES Database Administrator (DBA) creates and modifies the Medical Reference Database (MRD) at both the Service and Joint levels. When creating or modifying a Service MRD, the Service DBA must name or identify the MRD that is to be manipulated. Once the DBA enters the MRD Create Mode and selects a Create sub-option, MEPES recognizes all subsequent activity for that MRD sub-option as being created. If the user decides to stop entering data before totally completing the sub-option and exits, MEPES will not allow access back into that sub-option in the Create mode. The user must reenter through the Modify mode. Without identifying the MRD, MEPES will not allow access to any of the create/modify sub-options. This process is similar for the Joint DBA. The Browse option of Reference Data allows all MEPES users to view the Service and Joint MRDs on screen once a MRD is identified.

The MEPES User creates and modifies data in both the PAR and MPF modules. When creating or modifying a PAR or a MPF, the User must name or identify the PAR or MPF that is to be manipulated. Without identifying the PAR or MPF, MEPES will not allow access to any of the create/modify sub-options. Once the User enters the PAR or MPF Create Mode and selects a Create sub-option, MEPES recognizes all subsequent activity for that PAR/MPF sub-option as being created. If the user decides to stop entering data before totally completing the sub-option and exits, MEPES will not allow access back into that sub-option in the Create mode. The user must reenter through the Modify mode. Unlike the MRD option, the User does not have a BROWSE menu selection for either PAR or MPF. If the planner wants to view this data, the planner must access the data through the MODIFY option. Once the PAR or MPF is identified, MEPES allows the planner to call up the various data windows and move through them without making any changes.

Once the MEPES User has created a PAR and a MPF, the final step is to create a MWF. Again, the User must name the MWF before being allowed to select the associated MPF. At this point, the User has created the necessary files to complete the computational process. Upon entering the PLG/MPM option, the User identifies the MWF to execute. After running the computations, results are stored in the MWF. The User may then view these results by accessing the REPORTS option. Further selection criteria are available to allow the User to view all or selected portions of the computed requirements.

3.6 MENU OPTIONS

Figure 3-1, displays the high-level MEPES Menu Hierarchy. Additional Figures (3-2 thru 3-6) provide a greater level of detail.

MEPES MAIN MENU

Reference Data (See Figure 3-2)

Planning Tools
- Manage Pop at Risk (PAR) (see Figure 3-3)
- Manage Med Pln File (MPF) (see Figure 3-4)
- Manage Med Wrk File (MWF) (see Figure 3-5)
- TPFDD Actions (see Figure 3-6)
- Prev Med Models (To be Developed)

Med Threat/Intel (To be Developed)

Plans & Policies (To be Developed)

Hospitals (To be Developed)

Personnel (To be Developed)

Medical Logistics (To be Developed)

Blood (To be Developed)

Evacuation (To be Developed)

Utilities
- Backup/Restore

Assessment
- Identify MWF
- Admission/Disposition Workload
- Air Crew Requirements
- COA Analyzer
- Class I Requirements
- Class VIIIA Requirements
- Class VIIIB Requirements
- Evacuation Workload
- Theater Evacuee Distribution
- Supportable Evac Policy
- Medical Force Comparison

Figure 3-1: MEPES Menu Hierarchy.

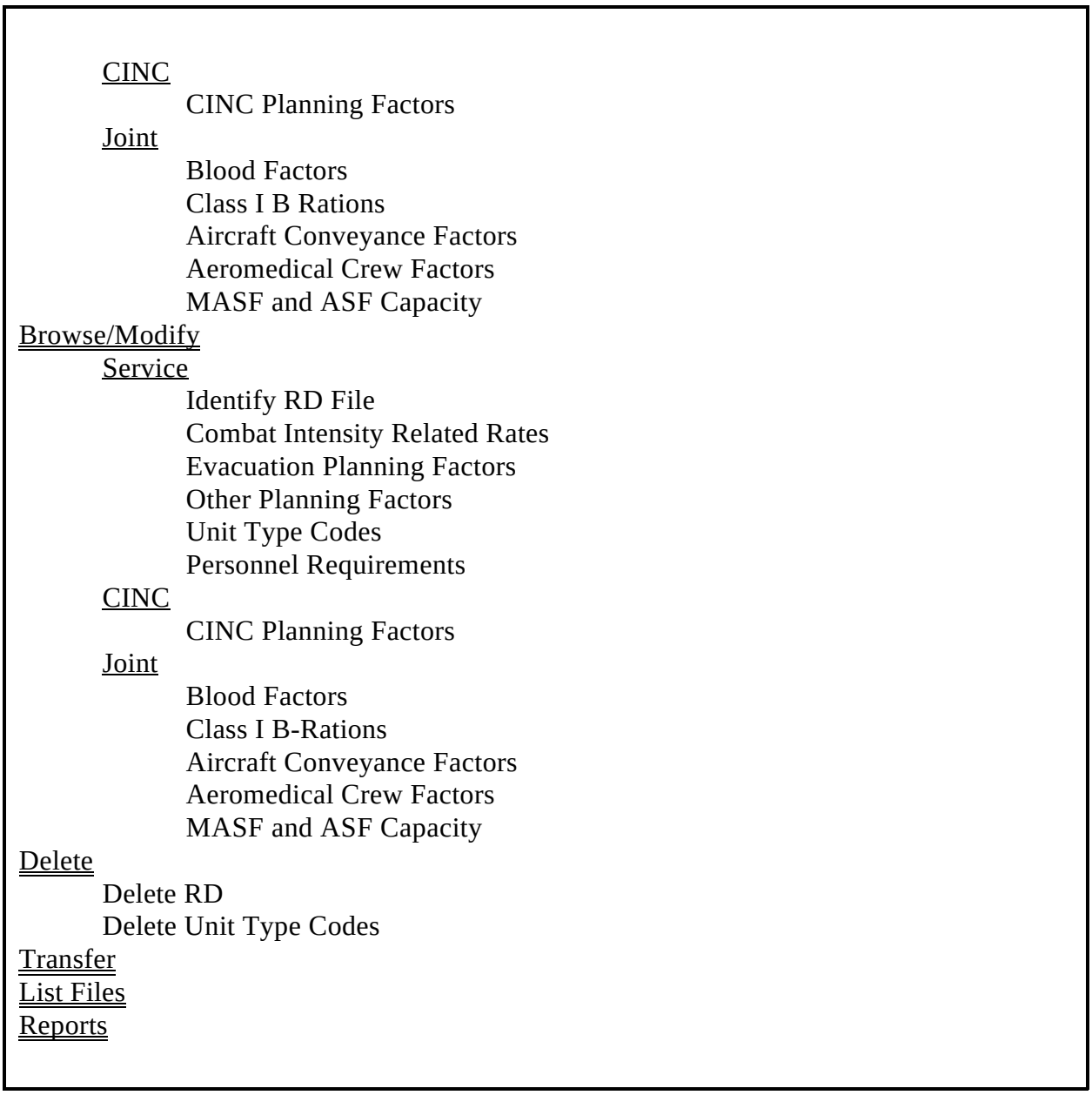

Figure 3-2: Manage Reference Data Menu.

NOTE: Browse and Modify are two separate menu options with identical sub-menu options. They are combined here to reduce the need for duplicate data.

Create

- Create PAR File
- Designate Combat Unit Type Codes*
- Designate/Assign OPZONES and Sectors*
- Create Patient Movement*

Modify

- Identify PAR File
- Modify Force Inclusion/Name
- Hand Build PAR Files
- Override C/S Designation*
  - FM
  - UTC
  - CC
  - GEOLOC
  - ULN
- Override OPZ/Sector Designation*
- Include/Exclude Records
- Force Subtraction
- Modify Patient Movement*

PAR Copy

Delete PAR

Delete OPLAN

List Files

Reports

- OPZONE Planning Report
- PAR Report

Figure 3-3: Manage Population At Risk Menu.

Create
- Name MPF
- Combat Intensity Levels/Rates*
  - OPZ Intensity/OPTEMPO
- MASF Capacity Assignments (Air Force Only)*
- MASF/ASF OPZONE Assignments (Air Force Only)*
- Evacuation Policy/Planning Factors*
  - Patient Type/ASMRO/Bed Planning
  - Evac Policy/Delay
  - Travel Times
- Dispersion/DIH
- Personnel Replacement Rates*
- Class I B Rations
- Class VIII Consumption Factors*
- Conveyance Planning Factors
- Aircraft Assignment*
- Bed Availability

Modify
- Identify MPF
- Combat Intensity Levels/Rates*
  - OPZ Intensity/OPTEMPO
- MASF Capacity Assignments (Air Force Only)*
- MASF/ASF OPZONE Assignments (Air Force Only)*
- Evacuation Policy/Planning Factors*
  - Patient Type/ASMRO/Bed Planning
  - Evac Policy/Delay
  - Travel Times
- Dispersion/DIH
- Personnel Replacement Rates*
- Class I B Rations
- Class VIII Consumption Factors*
- Conveyance Planning Factors
- Aircraft Assignment*
- Bed Availability

Copy
Delete
List Files
Reports

Figure 3-4: Manage Medical Planning Factors File Menu.

Create
- Name MWF
- APOE Sector Assignment (Joint User only)

Delete MWF

Modify MWF (Joint User only)
- Identify MWF
- Bed Dispersion
- Replacement Rates
- Evac Policy/Delay
- APOE Sector Assignment
- Report Override Data

Execute PLG/MPM

Calculations
- Identify MWF
- Air Crew Requirements (Joint MWF Required)
- Class I B Rations
- Non-Unit TPFDD Calculations

Transfer

List Files

PLG/MPM Reports

Figure 3-5: Manage Medical Working File Menu.

Medical Force Records
- Identify MWF
- Assign Medical Forces
- Generate Medical Force Listing

Non-Unit TPFDD Transfer

Non_Unit TPFDD Records

Figure 3-6: TPFDD Menu.

SECTION 4 - HELPFUL HINTS

4.1 GENERAL

This section provides some general comments (tips) about working within the MEPES environment.

4.2 USER CONFIRMATION

MEPES will display a User Confirmation Message to confirm a requested operation or action. MEPES presents the user with a pop-up dialog box, prompting the user to confirm or cancel the requested operation. If the user confirms the action, the operation is carried out. The pop-up dialog box will ask the user to either click **[YES]** or **[NO]**. If the user attempts to close the dialog box without selecting, then a pop-up error message will be displayed indicating that the user cannot dismiss the dialog box without responding to the question.

4.3 SYSTEM MESSAGES

MEPES provides the user with four types of messages: Positive messages, Warning messages, Error messages, and Fatal Error messages.

The type of message is represented through the use of different text and border colors. Positive messages are displayed as GREEN text on a black background. Warning messages are indicated by YELLOW text on a black background. Error messages are represented by RED text on a black background. Fatal Error messages are distinguished by BLACK text on a red background and an audible beep.

4.4 BUILDING A MEDICAL WORKING FILE

To build a MWF for the first time, the planner in reality creates three files. First, the planner must create the PAR file. Second, the planner creates the MPF in which a relationship between the MPF and a particular PAR file is established. Once the medical planner has created both the PAR and MPF files, the medical planner then creates a MWF by selecting a particular MPF file. When this is done, the MWF has established a PAR and MPF relationship needed to execute the PLG/MPM computational processes. After running these computations, MEPES will allow the planner to generate various levels of reports. Figure 4-1 identifies the sequence of events that should be used to build the MWF for the first time.

Table 4-1: Create a Service Medical Working File.

STEP #	MEPES OPTION	Activities Required	MEPES UM Reference
1	System Initiation	Initiate MEPES	Appendix B
2	Generate PAR	Load TPFDD Create PAR File Designate Combat Units Define/Assign OPZONEs/Sectors Create Patient Movement	Appendix D
3	Generate MPF	Name MPF Confirm Combat Intensity Rates Assign Combat Intensity Rates Assign Evacuation Policies/Delays Assign Evac Travel Times Confirm Dispersion Allowance/DIH Assign Personnel Replacement Rates Confirm Class VIIIA & VIIIB Rates Confirm Conveyance Planning Factors Adjust Bed Availability (if necessary)	Appendix E
4	Generate MWF	Create MWF Execute PLG/MPM Processing	Appendix F
5	Generate Reports	Print/View MEPES Reports	Appendix F
6	Terminate MEPES		

4.5 MODIFYING A MEDICAL WORKING FILE

Modification of a MWF does not follow a similar sequence as when creating a MWF. Once the planner accesses MEPES, modification of a MWF, in fact, requires the planner to modify data contained in either the PAR file or the MPF file that is associated with the MWF. Because MEPES is a relational database, if the planner modifies a PAR file then the planner must be aware that any modifications made to a PAR will affect ALL relationships. If the planner modifies data within a MPF, a similar situation may exist. MEPES does allow the planner to make modifications to any planner-defined parameter. Figure 4-2 identifies the sequence of events that should be used to modify a MWF.

Table 4-2: Modifying a Service Medical Working File.

STEP #	MEPES OPTION	Activities Required	MEPES UM Reference
1	System Initiation	Initiate MEPES	Appendix B
2	Generate PAR	Identify PAR File Modify Combat Units Modify OPZONEs/Sectors Modify Patient Movement	Appendix D
3	Generate MPF	Name MPF Modify Combat Intensity Rates Modify Combat Intensity Rates Modify Evacuation Policies/Delays Modify Evac Travel Times Modify Dispersion Allowance/DIH Modify Personnel Replacement Rates Modify Class VIIIA & VIIIB Rates Modify Conveyance Planning Factors Modify Bed Availability (if necessary)	Appendix E
4	Generate MWF	Name MWF Execute PLG/MPM Processing	Appendix F
5	Generate Reports	Print/View MEPES Reports	Appendix F
6	Terminate MEPES		

4.6 MISCELLANEOUS TIPS

4.6.1 Numbers

MEPES requires a number less than 1 be entered in the following format: 0.05. The leading zero to the left of the decimal point is necessary or an error message will be displayed. When modifying a floating point number, the number must be deleted from right to left using the [BACKSPACE] key. **DO NOT** use the [DELETE] key to delete the number from the left side. A "bug" in Motif will cause the system to lock. It is best to highlight the number, then type the new number to override the old value.

4.6.2 Searching Lists

MEPES allows the user to perform searches while using the F3-List Key on the keyboard. Valid search characters are a **" % "** (percentage symbol) and/or a "___" (underscore symbol). If these characters are placed within the data input field along with alpha-numeric values, they will be used as a filter for the list when F3-List is pressed. The following examples illustrate this process:

"A%"	Every item starting with an "A"
"A%B% or A%B	Every item with an "A" or "B" in it
A_B or A_B%	Every item starting with an "A" , any second character, "B" as the third character and anything after

4.6.3 Clearing Data Fields

If the user double clicks on a numerical field, MEPES will clear the field faster than by backspacing/deleting. If the user triple clicks on an alpha/alpha-numeric field, MEPES will clear the field faster than by backspacing/deleting. Cleared data fields are displayed by blackened fields inside data entry boxes.

4.6.4 Loading the GEOFILE

Although GEOLOCs and Country Codes are available through a call-up list, the user should realize that the size of the entire GEOFILE is large (over 56K records), and that full retrieval may take up to 10 to 15 minutes.

4.6.5 Selecting Multiple List Box Items

MEPES follows the standard Windows convention when selecting multiple data records from a List Box. The User must use press and hold the Control Key while clicking the left mouse button on the data records being selected.